FILE COPY
DO NOT REMOVE
FROM FILE

FEASIBILITY STUDY

Aberdeen
Bridge No. 3 on NC 5 (South Street)
Over Aberdeen Creek
Moore County
U-2300

Prepared by
Planning and Research Branch
Division of Highways
N. C. Department of Transportation

Leigh B. Cobb
Project Planning Engineer

Wayne Elliott
Unit Head

6-29-88
Date

J. H. Greenhill
Manager, Planning and Research

Aberdeen
Bridge No. 3 on NC 5 (South Street)
Over Aberdeen Creek
Moore County
U-2300

The captioned project is included in the 1988-1996 Transportation Improvement Program for feasibility study and/or right-of-way protection but is not currently funded. This report provides a brief analysis of possible improvements.

I. EXISTING CONDITIONS

NC 5 is designated a major route in the Southern Pines/Aberdeen Thoroughfare Plan. The facility serves as a radial route into the west side of Aberdeen.

Development in the immediate vicinity of the bridge is full density commercial (see Figure 2).

In the one block segment between US 1-15-501 and SR 1108 (includes bridge and approaches), NC 5 is basically a two-lane facility. At the US 1 intersection NC 5 widens to three lanes with curb and gutter (36 feet face-to-face). The intersection of NC 5-US 1-15-501 is signalized.

At the west end of the studied bridge, NC 5 turns sharply to the north. At this point SR 1108 (S. Pinehurst Street) forms a T-intersection with NC 5. The predominant flow of traffic is eastward along NC 5.

The purpose of the project is to facilitate the flow of traffic along NC 5. Eastbound traffic is reported to back up along NC 5 northwest of the bridge, therefore, additional lanes are needed on the existing bridge to relieve traffic congestion.

II. BRIDGE NO. 3

Following is a description of Bridge No. 3 which is located west of the Aberdeen downtown area.

Year constructed - 1922
Type - Reinforced concrete deck girder with a reinforced concrete substructure
Length - 52 feet
Horizontal alignment - tangent
Clear roadway width - 20 feet
Vertical clearance - approximately 6 feet
Operation - 2-lane, 2-way
Raised sidewalk - 5 feet wide on north and south side of bridge
Utilities - 10-inch water line
Sufficiency rating - 65.4

III. TRAFFIC ESTIMATES

The estimated 1988 average daily traffic of 9200 vehicles along NC 5 at Bridge No. 3 is predicted to increase to 16,300 vehicles during the year 2008 based on the existing street system. Turning movements in the vicinity of the bridge are shown in Figure 4.

IV. RECOMMENDED IMPROVEMENTS

The most feasible method of replacing Bridge No. 3 is to provide a new structure along an alignment immediately to the north as shown in Figure 2. The structure would consist of a double-barrel 12-foot by 8-foot reinforced concrete box culvert.

Approximately 1100 feet of new approaches would be required. Four travel lanes (52 feet face to face of curbs) would be necessary to accommodate anticipated traffic volumes. A right-of-way width of approximately 70 feet would be required.

The alignment is desirable to accommodate the major east-west flow of traffic across the bridge. SR 1108 (S. Pinehurst Street) would be extended about 50 feet to connect with the recommended revised alignment of NC 5. Traffic would be maintained on the existing bridge during construction.

An additional southbound lane would be required on US 1-15-501 at the intersection with NC 5. This additional lane is necessary to provide a tolerable level of service within the intersection.

Removal of the existing bridge will require the relocation of utilities attached to the bridge.

V. ALTERNATIVES

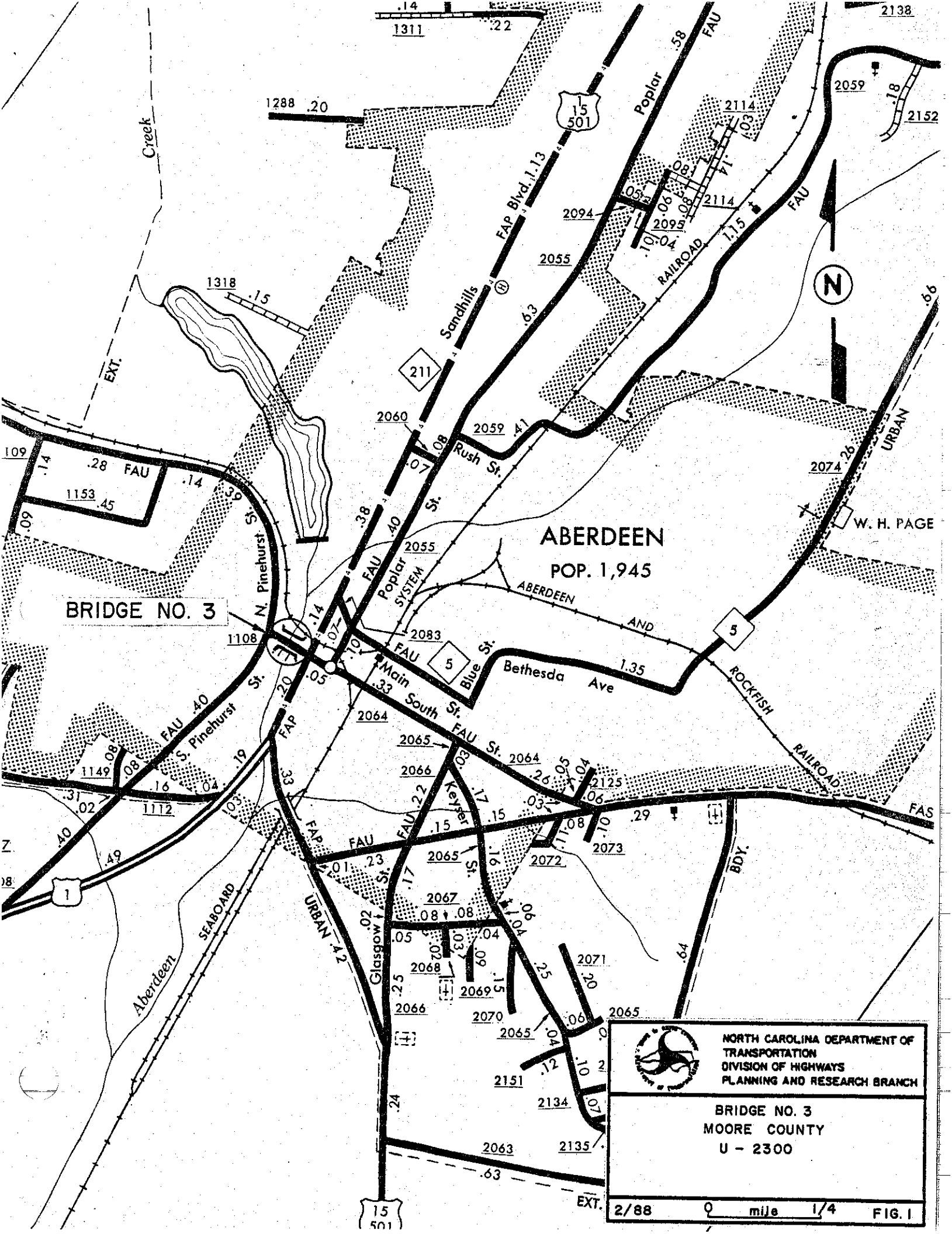
The Southern Pines-Aberdeen Thoroughfare Plan (see Figure 5) suggests provision of a thoroughfare on new location to the north of the studied bridge. This alternate should be reconsidered as the thoroughfare plan is updated in the near future. It appears the relocation to the north would be cost prohibitive due to the terrain. The northern alignment would require a structure over Aberdeen Creek, a structure over the Aberdeen and Rockfish Railroad, and utilization of park property. The northern alignment has no apparent advantages over the recommended alignment.

Bridge No. 3 does not qualify for replacement under the Federal-Aid Bridge Replacement Program due to its high sufficiency rating (65.4).

The estimated cost of recommended improvements is $625,000 including $525,000 for construction and $100,000 for right-of-way acquisition.

VI. POSSIBLE ENVIRONMENTAL IMPACTS

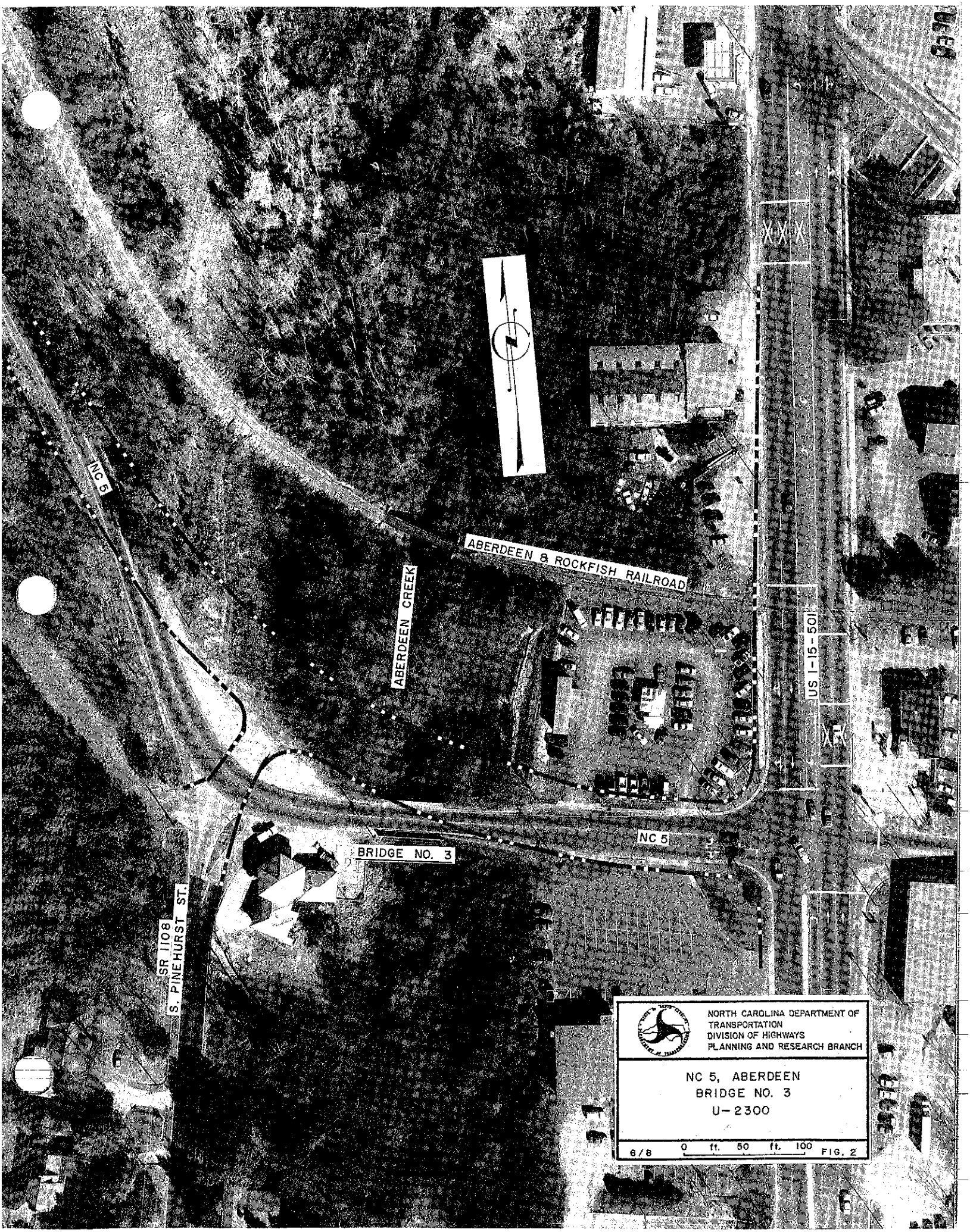
No significant environmental impacts are anticipated. No homes or businesses are to be relocated. Some increase in noise levels may occur. Limited impacts on wetlands may occur. Prior to implementation of the project, a detailed planning/environmental document should be prepared.



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND RESEARCH BRANCH

BRIDGE NO. 3
MOORE COUNTY
U - 2300

2/88 0 mile 1/4 FIG. 1

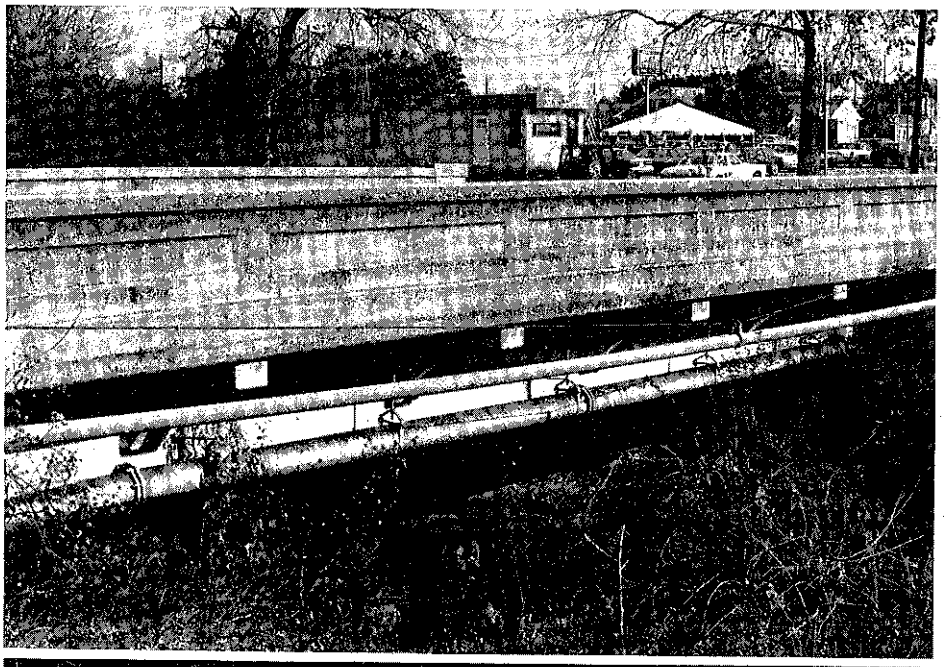


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND RESEARCH BRANCH

NC 5, ABERDEEN
BRIDGE NO. 3
U-2300

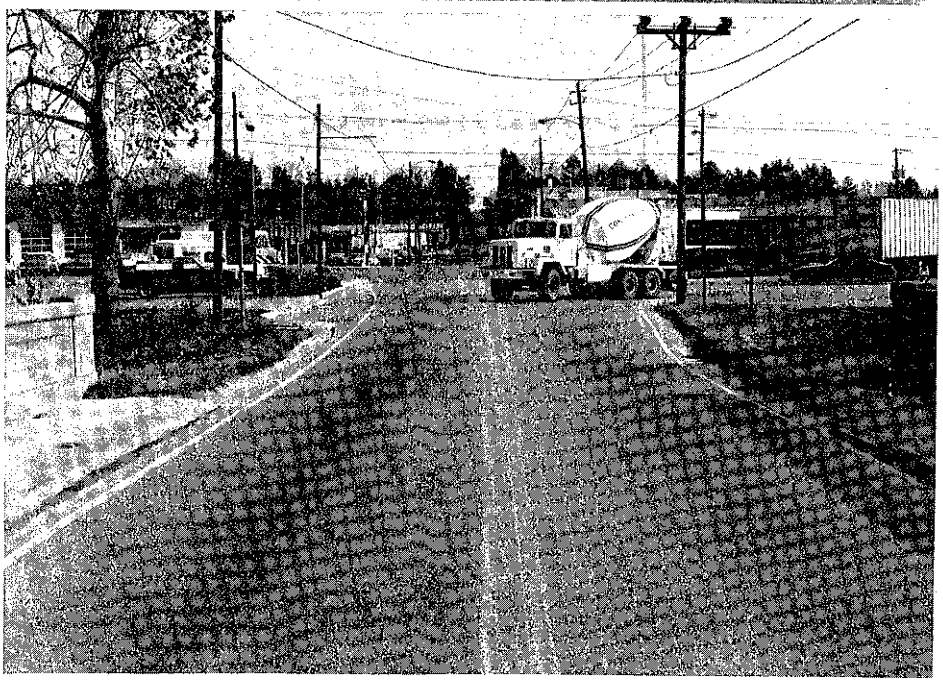
6/8 0 ft. 50 ft. 100 FIG. 2

BRIDGE NO. 3
MOORE COUNTY
U - 2300



SIDE VIEW

WEST APPROACH



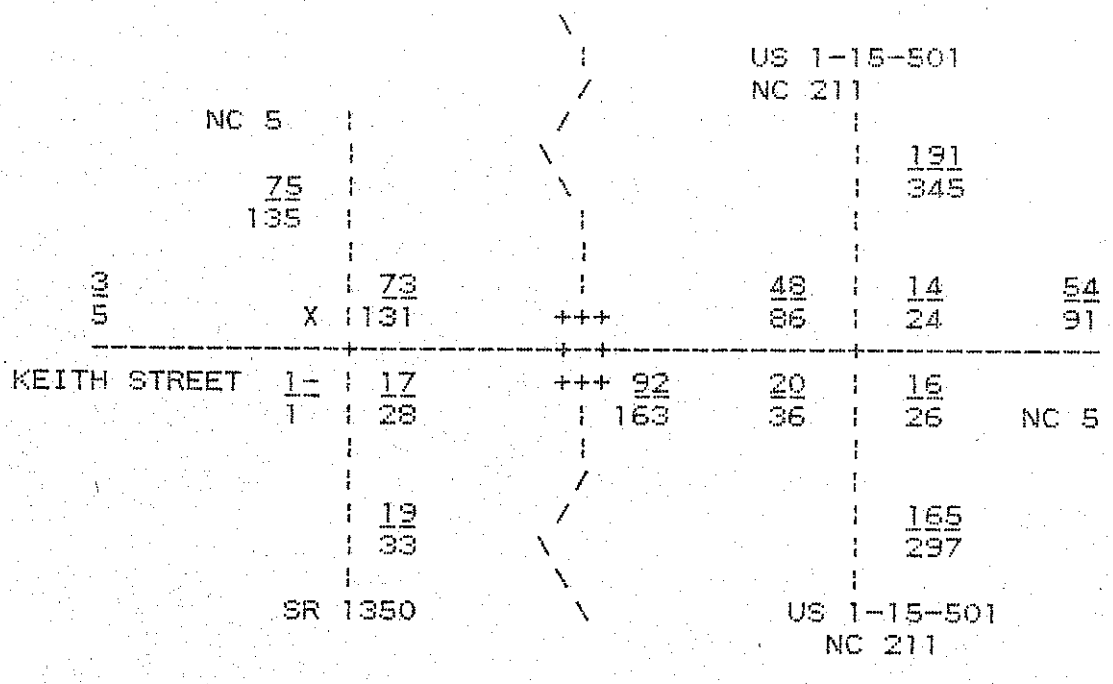
EAST APPROACH

FIGURE 3

MOORE CO.
3/9/88

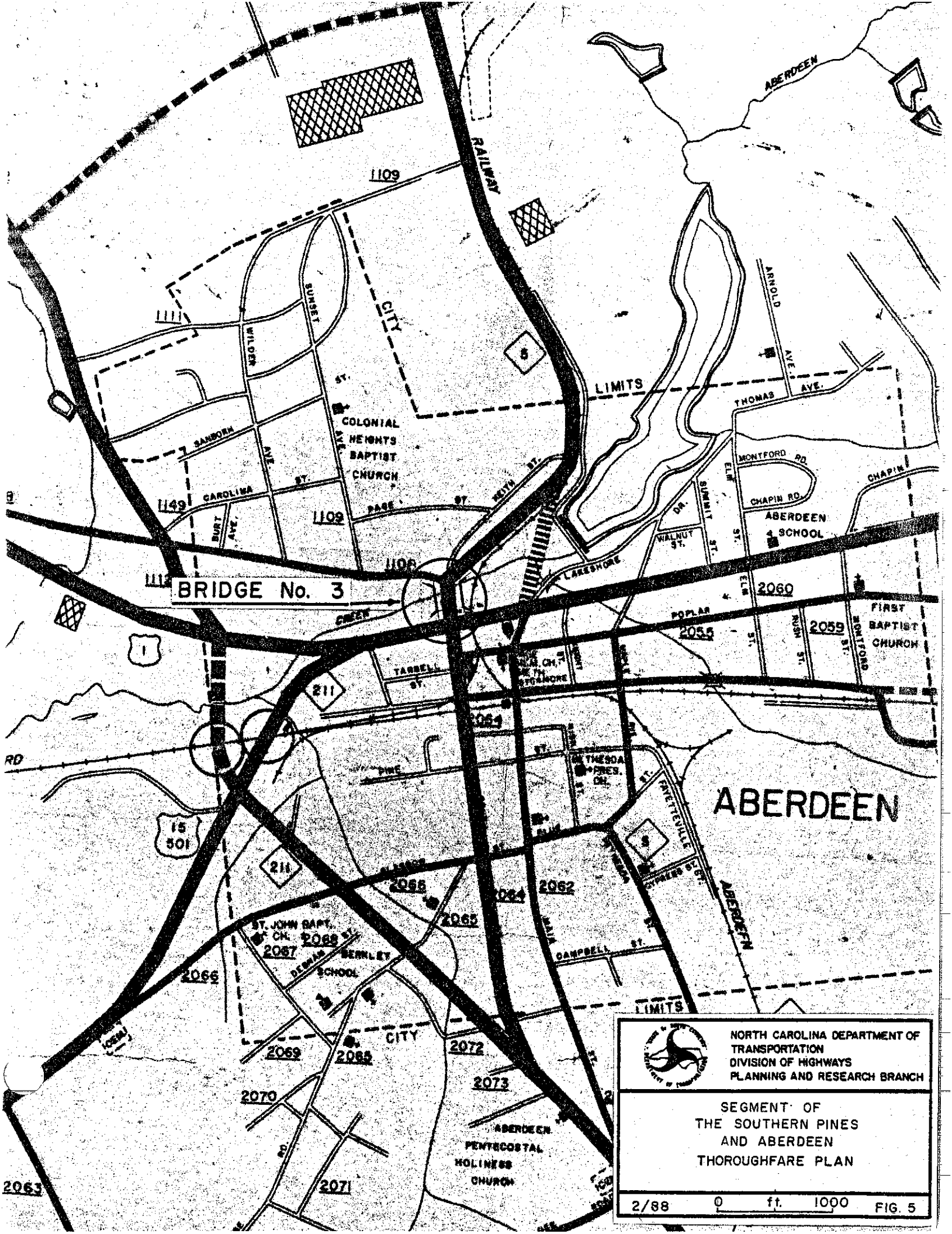
NC 5 FROM SR 1108 TO US 15-501-NC 211, ABERDEEN

EST. 1988/2008 ADT IN HUNDREDS



	ADT		% TRUCKS		
	1988	2008	TTST	DUALS	DHV
NC 5	9,200	16,300	3	4	10
US 1-15-501	16,500	29,700	4	3	10
US I-15-501	19,100	34,500	4	3	10

FIGURE 4



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND RESEARCH BRANCH

SEGMENT OF
THE SOUTHERN PINES
AND ABERDEEN
THOROUGHFARE PLAN

2/88 0 ft. 1000 FIG. 5